CLAIMS

What is claimed is:

1. An immunotoxin comprising a cytotoxin attached to an anti-gp120 antibody having the binding specificity of 3B3 and a minimum binding affinity of 3B3, wherein said immunotoxin specifically binds to and kills mammalian cells infected with HIV-1.

2. The immunotoxin of claim 1, wherein said cytotoxin is selected from the group consisting of ricin, abrin, a modified diphtheria toxin, and a modified *Pseudomonas* exotoxin.

3. The immunotoxin of claim 2, wherein said cytotoxin is a modified *Pseudomonas* exotoxin.

4. The immunotoxin of claim 3, wherein said modified *Pseudomonas* exotoxin is selected from the group consisting of PE38, PE40, PE38KDEL, and PE38REDL.

5. The immunotoxin of claim 4, wherein said modified *Pseudomonas* exotoxin is PE38.

6. The immunotoxin of claim 1, wherein said antibody is selected from the group consisting of a single-chain Fv (scFv), a single-chain Fab (scFab), and a disulfide stabilized Fv (dsFv).

7. The immunotoxin of claim 6, wherein said antibody is a recombinantly expressed single-chain Fv.

8. The immunotoxin of claim 6, wherein said antibody is 3B3(Fv).

9. The immunotoxin of claim 1, wherein said immunotoxin is a fusion protein.

10. The immunotoxin of claim 1, wherein said immunotoxin is 3B3(Fv)-PE38.

11. The immunotoxin of claim 1, wherein said immunotoxin is suspended or dissolved in a pharmaceutically acceptable carrier or excipient.

12. A nucleic acid that encodes a single chain fusion protein, said nucleic acid comprising:

a) a nucleic acid sequence that encodes a single-chain antibody having the binding specificity of 3B3; and

b) a nucleic acid sequence that encodes a modified *Pseudomonas* exotoxin.

13. The nucleic acid of claim 12, wherein said modified *Pseudomonas* exotoxin is selected from the group consisting of PE38, PE40, PE38KDEL, and PE38REDL.

14. The nucleic acid of claim 13, wherein said modified *Pseudomonas* exotoxin is PE38.

15. The nucleic acid of claim 13, wherein said antibody is selected from the group consisting of a single-chain Fv (scFv), a single-chain Fab (scFab), a disulfide stabilized Fv (dsFv).

16. The nucleic acid of claim 15, wherein said antibody is a recombinantly expressed single-chain Fv.

17. The nucleic acid of claim 15, wherein said antibody is 3B3(Fv).

18. The nucleic acid of claim 13, wherein said fusion protein is 3B3(Fv)-PE38.

19. A single chain Fv antibody having the binding specificity of 3B3.

20. The antibody of claim 19, wherein said antibody has the amino acid sequence of 3B3 or conservative substitutions thereof.

21. The antibody of claim 20, wherein said antibody is 3B3(Fv).

22. A nucleic acid that encodes a single chain Fv antibody having the binding specificity of 3B3.

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23. The nucleic acid of claim 22, wherein said antibody has the amino acid sequence of 3B3 or conservative substitutions thereof.

24. The nucleic acid of claim 20, wherein said nucleic acid encodes the 3B3 antibody.

25. A pharmaceutical composition, said composition comprising:

a pharmaceutically acceptable carrier or excipient; and

an immunotoxin comprising a modified Pseudomonas exotoxin attached to an anti-gp120 antibody having the binding specificity of 3B3, wherein said immunotoxin specifically binds to and kills mammalian cells infected with HIV-1.

26. The composition of claim 25, wherein said modified *Pseudomonas* exotoxin is selected from the group consisting of PE38, PE40, PE38KDEL, and PE38REDL.

27. The composition of claim 26, wherein said modified *Pseudomonas* exotoxin is PE38.

28. The composition of claim 25, wherein said antibody is selected from the group consisting of a single-chain Fv (scFv), a single-chain Fab (scFab), a disulfide stabilized Fv (dsFv).

29. The composition of claim 28, wherein said antibody is a recombinantly expressed single-chain Fv.

30. The composition of claim 28, wherein said antibody is 3B3(Fv).

31. The composition of claim 25, wherein said immunotoxin is a fusion protein.

32. The composition of claim 25, wherein said immunotoxin is 3B3(Fv)-PE38.

33. A method of killing a cell displaying a gp120 protein or fragment thereof, said method comprising contacting said cell with an immunotoxin comprising a modified Pseudomonas exotoxin attached to an anti-gp120 antibody having the binding specificity of

3B3, wherein said immunotoxin specifically binds to and kills mammalian cells infected with HIV-1.

34. The method of claim 33, wherein said modified *Pseudomonas* exotoxin is selected from the group consisting of PE38, PE40, PE38KDEL, and PE38REDL.

35. The method of claim 34, wherein said modified *Pseudomonas* exotoxin is PE38.

36. The method of claim 33, wherein said antibody is selected from the group consisting of a single-chain Fv (scFv), a single-chain Fab (scFab), a disulfide stabilized Fv (dsFv).

37. The method of claim 36, wherein said antibody is a recombinantly expressed single-chain Fv.

38. The method of claim 36, wherein said antibody is 3B3(Fv).

39. The method of claim 33, wherein said immunotoxin is a fusion protein.

40. The method of claim 33, wherein said immunotoxin is 3B3(Fv)-PE38.

41. A method of killing or inhibiting the growth of cells bearing gp120 protein or fragment thereof, said method comprising '

a) administering to an organism containing said cells a pharmaceutical composition in an amount sufficient to kill or inhibit the growth of said cells, said composition comprising:

a pharmaceutically acceptable carrier or excipient; and

an immunotoxin comprising a modified *Pseudomonas* exotoxin attached to an anti-gp120 antibody having the binding specificity of 3B3 and minimum affinity of 3B3, wherein said immunotoxin specifically binds to and kills mammalian cells infected with HIV-1.

42. The method of claim 41, wherein said modified *Pseudomonas* exotoxin is selected from the group consisting of PE38, PE40, PE38KDEL, and PE38REDL.

43. The method of claim 42, wherein said modified *Pseudomonas* exotoxin is PE38.

44. The method of claim 41, wherein said antibody is selected from the group consisting of a single-chain Fv (scFv), a single-chain Fab (scFab), a disulfide stabilized Fv (dsFv).

45. The method of claim 44, wherein said antibody is a recombinantly expressed single-chain Fv.

46. The method of claim 44, wherein said antibody is 3B3(Fv).

47. The method of claim 41, wherein said immunotoxin is a fusion protein.

48. The method of claim 41, wherein said immunotoxin is 3B3(Fv)-PE38.

49. The method of claim 41, further comprising administering to said organism a protease inhibitor.

50. The method of claim 41, further comprising administering to said organism a reverse transcriptase inhibitor.

51. The method of claim 41, further comprising administering to said organism both a protease inhibitor and a reverse transcriptase inhibitor and then withdrawing the reverse transcriptase inhibitor while maintaining protease inhibitor dosing during administration of said pharmaceutical compositions.

52. A kit for killing cells that display a gp120 protein, said kit comprising a container containing an immunotoxin comprising a cytotoxin attached to an anti-gp120 antibody having the binding specificity of 3B3 and a minimum binding affinity of 3B3, wherein said immunotoxin specifically binds to and kills mammalian cells infected with HIV-1.

53. The kit of claim 52, wherein said cytotoxin is selected from the group consisting of ricin, abrin, a modified diphtheria toxin, and a modified *Pseudomonas* exotoxin.

54. The kit of claim 53, wherein said cytotoxin is a modified *Pseudomonas* exotoxin.

55. The kit of claim 53, wherein said immunotoxin is 3B3(Fv) attached to a modified *Pseudomonas* exotoxin.

56. The kit of claim 55, wherein said immunotoxin is 3B3(Fv)-PE38.

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